Amendments to the Claims

The following listing of the claims will replace all prior versions, and listings of the claims in the application:

Listing of Claims

1-8 Canceled

9. (Previously presented) A method of producing a response with a smart card, the smart card comprising:

an input for receiving an INPUT;

calculation means for producing a response which is responsive to the INPUT and a secret key by utilizing a first predetermined function; and

an output for outputting said response;

said method comprising:

storing in a memory of the smart card a key-specific number and a coded key, which has been calculated using the secret key, the key-specific number and a second predetermined function; and,

when producing the response:

reading said key-specific number and said coded key from the memory of the smart card;

calculating the secret key with the smart card using said key-specific number and said coded key by using the inverse function of said second pre-determined function; and

utilizing the calculated secret key, the INPUT and the first predetermined function to produce said response with said smart card.

10. (Previously presented) The method as claimed in claim 9, wherein said second predetermined function is a device-specific function, and that said key-specific number is a random number.

11. (Previously presented) The method as claimed in claim 9 comprising calculating and storing in the memory of the smart card a new coded key and a new key-specific number, when the calculation means have utilized said first predetermined function a predetermined number of times.

12. (Previously presented) A smart card comprising:

an input for receiving an INPUT;

calculation means for producing a response which is responsive to the INPUT and a secret key utilizing a first predetermined function;

a memory for storing a key-specific number and a coded key, which has been calculated using the secret key, the key-specific number and a second predetermined function;

means for retrieving the key-specific number and the coded key from the memory and feeding them to the calculation means, which calculates the secret key by means of the coded key, the key-specific number and the inverse function of said second predetermined function when producing said response; and

an output for outputting said response.

13. (Previously presented) The smart card as claimed in claim 12, wherein the smart card comprises coding means for calculating a new coded key by means of the secret key, a new key-specific number to be fed to the coding means, and said second predetermined function, and the smart card further comprises means for replacing the coded key and the key-specific number stored in the memory with the new coded key calculated by the coding means, and the new key-specific number.

14. (Previously presented) A system comprising:

a smart card having:

an input for receiving an INPUT;

calculation means for producing a response which is responsive to the INPUT and a secret key utilizing a first predetermined function;

a memory for storing a key-specific number and a coded key, which is calculated using the secret key, the key-specific number and a second predetermined function;

means for retrieving the key-specific number and the coded key from the memory and for feeding them to the calculation means, which calculates the secret key using the coded key, the key-specific number and the inverse function of said second predetermined function when producing said response; and

an output for outputting said response; and

an apparatus, connected to the input of the smart card for feeding said INPUT to the smart card, and to the output of the smart card for receiving said response, said apparatus comprising:

a memory for storing said secret key;

calculation means for calculating a check value by means of the INPUT, the secret key and said first predetermined function; and

means, which compares the response obtained from the output of the smart card with the check value and indicates if the response corresponds to the check value.

15. (Previously presented) The system as claimed in claim 14, wherein said apparatus comprises:

means for calculating the coded key by means of the secret key, the key-specific number and the second predetermined function; and

means for storing the coded key and the key-specific number in the memory of the smart card.

16. (Previously presented) The system as claimed in claim 15, wherein said apparatus further comprises a random number generator for generating the key-specific number during the calculation of the coded key.